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ABSTRACT

Noting that adolescents who commit suicide are often clinically depressed, this paper examines various approaches in the treatment of depression. Major treatment models of adult depression, which can be directly applied to the treatment of the depressed adolescent, are described. Major treatment models and selected research studies are reviewed in the areas of: (1) cognitive therapy; (2) cognitive and behavior therapy; (3) cognitive therapy with pharmacotherapy; (4) the use of pharmacotherapy for acute depression; (5) treatment of manic depression with lithium; (6) the use of lithium in learning and behavior problems; and (7) reality therapy. The paper concludes that a combination of therapies may be needed to treat depressed adolescents: one therapy may be needed to treat the condition immediately, especially if the teenager is suicidal, and another therapy may be needed later to alter cognitive distortions and to encourage responsible choices in coping with life's problems. (NB)

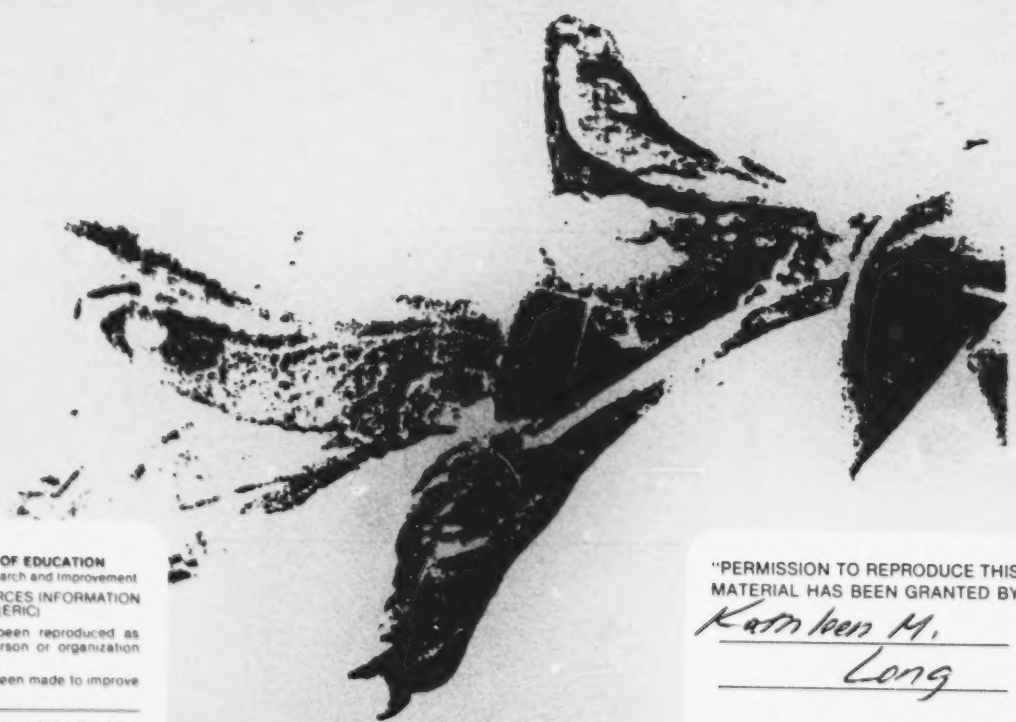
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Emerging from depression:

TREATMENT OF ADOLESCENT DEPRESSION
Using The Major Treatment Models
Of Adult Depression

CG 020886



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INTRODUCTION

The American Medical Association has estimated that 5,000 teenagers take their own lives each year. Those who commit suicide are often clinically depressed. This paper will examine various approaches in the treatment of depression. Models for treatment of childhood and adolescent depression arise largely from treatment models of adult depression, because as two conditions seen as similar (Clarizio, 1985). Thus, major treatment models of adult depression will be examined. These models can be directly applied to the treatment of the depressed adolescent. This issue will be examined from a school psychologist perspective rather than from strictly an education perspective. Major treatment models including some sample research will now be presented. The following abbreviations will be used: "CT" for Cognitive Therapy and "TCA" for tricyclic antidepressants, and "BDI" for Beck Depression Inventory.

Behavior is a total of thinking/believing, acting/choosing, feeling and physiology. We have the least control over our feelings and physiology (Glasser, 1985). The three major treatment models of depression to be presented concern: (a) thinking and believing (cognitive therapy), (b) physiology (pharmacotherapy), and (c) choosing/acting (reality therapy). Behavior therapy, which mainly sees depression as caused by lack of reinforcers, will also be briefly mentioned in the first study.

COGNITIVE THERAPY

Distorted thinking in depression is considered to be central in cognitive theories with feelings, motivations, and physical symptoms considered to be consequences of these cognitive distortions. Reality is distorted and depressed individuals overgeneralize, minimize positives and make absolute judgments (Clarizio, 1985). Aaron Beck is the most well known cognitive therapist and his therapy seeks to correct distortions and to change the way the depressed person thinks about himself. Through careful and subtle attacks on the logic underlying overgeneralizations or irrational ideas, he attempts to produce change in the cognitive thinking process (as cited in Ivey, Ivey & Simek-Downing, 1987). In Beck's therapy the patient is reassured that his/her problem is understood and the therapy tries to give the patient a sense of mastery of the situation.

COGNITIVE AND BEHAVIOR THERAPY

A study by Shaw (1977) compared cognitive and behavior therapy with 32 depressed subjects (CA 18-26) in Western Ontario, Canada who scored in the moderate range of depression on the Beck Depression Inventory (BDI) and the Hamilton Rating Scale for Depression (HRSD). The study included two experimental and two control groups. One control group was told they were on a waiting list and the other received nondirective therapy. The cognitive modification group (n=8) received the treatment suggested by Beck and the behavior modification group (n=8)

received the treatment suggested by Lewinsohn (as cited in Shaw, 1977). The behavior modification group used activity schedules, verbal contracts, and behavior rehearsal techniques to teach communication and social skills. Appendix A shows mean changes in depression at four assessment periods. The cognitive modification group had the lowest scores of depression on all three assessments and the significance levels provide support that cognitive therapy is a legitimate treatment of depression. This study used a small sample and used only moderately depressed subjects. It does, however, give evidence of the usefulness of Beck's cognitive therapy to decrease depression.

Rowe (1983) states that depression is something which we create for ourselves and just as we create it we can dismantle it. She says that every emotion pleasant or unpleasant is accompanied by physical changes and anti-depressant drugs have the effect of reversing or limiting some of the physiological changes that occur when a person is depressed. She does not believe that there is a physiological change which precedes a depression.

COGNITIVE THERAPY AND PHARMACOTHERAPY

There are various kinds of depression (see Appendix B). In the next three studies it is important to distinguish between unipolar ("down" mood only) and bipolar depression (altering periods of "down" feelings with manic-hyperactive often irritable states).

Murphy, Simmons, Wetzel, & Lustman (1984) did a study using 87 patients from the Washington University Outpatient Psychiatry Clinic, St. Louis (CA 18-60) who were suffering from unipolar depression. Subjects were randomly assigned to four treatments over 12 weeks with a four week follow-up:

1. CT - Cognitive Therapy alone - 50 minutes/two times a week for first eight weeks and then 1 time a week for last four weeks.

2. TCA - A tricyclic antidepressant - (nortriptyline hydrochloride) - 20 minutes per week.

3. CT and an active placebo - 60 minutes per week.

4. CT plus a TCA.

The descriptive characteristics of the four groups were well documented across many factors and the composition of the groups did not differ significantly on any of the descriptive variables examined. The cognitive therapy chosen was that presented by Beck (as cited in Shaw, 1977). A two-way repeated measures multi-variate analysis of variance (MANOVA) using a 4x2 factorial design was used. Results showed depression scores at the termination of treatment were significantly lower both on the BDI and the HRSD but there were no statistically significant differences between the four treatment groups on these measures (see Appendix C). Subjects were drawn from only one psychiatric clinic and this limit generalizability. However, this study showed that CT either alone or in combination was as effective as treatment with antidepressants.

Simmons, Garfield, & Murphy (1984) did a study in the Washington University Psychiatry Clinic using 28 patients (CA 18-60) who were suffering from moderate to severe unipolar depression. This study used only CT (also nortriptyline hydrochloride) and a TCA. Subjects receiving CT did demonstrate significant change on all three cognitive measures, however, so did the medication group (see Appendix D). The sample size used was small and this limits generalizability. The authors said that cognitive distortions that are the focus of CT may behave more as symptoms of depression rather than as causes. Also they say that CT may then be effective in alleviating the signs and symptoms of depression. Both cognitive therapy and pharmacotherapy can be seen as points of entry into the complex constellation of emotions, cognitions, behaviors, and physiological processes. Other forms of therapy may identify other points of entry into this system and work by reorganizing the system. People become depressed via a number of different routes and they can become "undepressed" via several different routes. Different treatments work by attacking different facets of the overall picture. Those factors are chemical, experiential and behavioral (Simmons et al., 1984).

THE USE OF PHARMACOTHERAPY FOR ACUTE DEPRESSION

Lobel and Hirschfield (1984) say that there are three major types of drugs used to treat acute affective depression: (a) tricyclic antidepressants, such as imipramine; (b) monoamine

oxidase inhibitors (MAOI's); and (c) lithium. Appendix E briefly outlines the effects of these drugs on the nervous system.

Non-drug treatments may be important in depressive illness but with moderate and severe depression an initial improvement with biological treatment, either drugs or ECT, may be necessary before cognitive therapy, psychotherapy, marital therapy, or appropriate social interventions can profitably be employed. (Katona & Barnes, 1985, p. 168)

TREATMENT OF MANIC DEPRESSION WITH LITHIUM (CARBONATE)

One study examining the use of one of the antidepressant drugs, lithium, will now be briefly presented. Prien, Klett, & Caffey (1973) did a study with 122 male and female patients with both bipolar and unipolar depression who had been discharged from the hospital where they have been treated for acute depression. The average age of the subjects was mid-30's but some adolescents were used in the sample. Patients were classified as bipolar or unipolar based on the presence or absence of a history of mania.

Upon hospital discharge patients were randomly assigned to lithium carbonate, imipramine (a tricyclic antidepressant) or placebo regimen for a two year period. Subjects were evaluated in terms of occurrence of affective depressive episodes. The Global Affective Scale was completed by the treating physician at four week intervals. A social worker also made a global assessment based on interviews and home visits. Subjects were also evaluated every three months on the Inpatient

Multidimensional Psychiatric Scale (IMPS) and the Self-Report Mood Scale.

Unipolar subjects receiving placebos had a significantly higher number of depressive episodes than those receiving the other two drugs. Although the differences were not statistically significant, bipolar patients receiving either placebo or imipramine had a higher number of depressive episodes than those on lithium carbonate. With the unipolar subjects, both lithium carbonate and imipramine were significantly superior to the placebo group and there was no significant difference between lithium and imipramine. With the bipolar group lithium was significantly superior to both imipramine and placebo and there was no significant difference between imipramine and placebo (see Appendix F). In the lithium group the most prevalent reactions were diarrhea, fine hand tremors, muscle weakness, anorexia, and somnolence. In most cases these symptoms caused little difficulty and disappeared without dosage adjustment (18% had reactions severe enough to require dosage reduction or temporary drug withdrawal).

COMMENT

Although this study used a fairly large sample, subjects were limited to those discharged from the hospital. Geographical and culture subject breakdown in the sample was not given and this weakens generalizability. However, this study does give evidence of the usefulness of lithium carbonate over imipramine

in treating acute depression. Side effects must be considered and dosage reduction or temporary drug withdrawal may be required. There is always the danger that an acutely depressed individual could overdose on antidepressants such as lithium. The videotape, "The Suicidal Patient in Medical Practice" (Eli Lilly and Company, 1979) implicates antidepressants in suicide deaths and suicide attempts.

USE OF LITHIUM IN LEARNING AND BEHAVIOR PROBLEMS

Adolescents suffering from bipolar depression may misbehave in the manic stage of condition. Some children and adolescents thought of as hyperactive may really be exhibiting the manic stage in bipolar depression.

About one half of the children with the condition commonly referred to as hyperactivity, with behavioral and learning difficulties, may be exhibiting an early form of bipolar disorder. Bipolar disorders are rarely diagnosed among children. The application of simple logic would indicate that this disorder, encompassing large numbers of the adult population, had its beginning sometime earlier. (Heckelman, 1984, p. 134)

Heckelman (1983) adds that over half of the cases of adults classified as schizophrenia are really bipolar and a majority of alcoholics have a bipolar disorder. He supports the use of lithium with bipolar children and recommends a dosage of .6 or .8 (below .5 will rarely be effective).

Drugs like Ritalin may be covering up the bipolar disorder by temporarily supressing symptoms. However, bipolar children with learning and behavioral problems rarely improve in any large measure with the best of remedial instruction or special curriculum without the use of Lithium to correct a chemical imbalance in their body. (Heckelman, 1983, p. 135)

TREATMENT OF DEPRESSION WITH REALITY THERAPY

Some believe that antidepressants only treat the symptoms of depressing and do not change the ability to solve life problems. Glasser's reality therapy looks at our choices and emphasizes that we can choose not "to depress" and to act responsibly in the real world. Glasser (1985) believes we store pictures of things in the world that will satisfy one or more of our basic needs. When reality does not satisfy these pictures in our minds we can become depressed or frustrated. Glasser says the only way we can take pictures out of our albums is to replace them with others that are attainable in the real world. Reality therapy concerns itself with helping individuals gain control over their lives. Glasser emphasizes that regardless of how we feel, we always have some control over what we do when we change the "doing" component we cannot avoid changing the thinking, feeling, and physiological components as well.

The more we get involved in an active doing behavior that is markedly different from choosing a misery like depressing,

the more we will also change what we think, feel, and experience from our bodies. And if what we do gives us greater control, it will be accompanied by better feelings, more pleasant thoughts, greater physical comfort. (Glasser, 1985, p. 51-52)

Rueter (1980) looked at one "active doing" behavior--jogging to reduce moderate depression in college students in Montreal, Canada. The runners (n=9) ran three times per week for ten weeks while engaging in therapeutic counseling. The non-runners (n=9) received only therapeutic counseling and were told they were on the waiting list for the runner group. Pre-BDI scores for running and non-running groups did not differ significantly prior to the running intervention. The post-BDI mean for the running group was in the normal (non-depressed) range. A two way ANOVA showed a significant main effect for the treatment factor ($p < .05$). However, another control group consisting of a running only treatment and a larger sample would have been more beneficial. This treatment seems especially good for younger depressed individuals who are not severely depressed. It has no side effects and provided proper warming up/cooling down procedures are used, it can also increase physical fitness and well-being.

CONCLUSION

This writer concurs with Simmons et al. (1984) that pharmacotherapy (using antidepressants), cognitive therapy, and reality therapy can also be seen as points of entry into the

complex constellation of emotions, cognitions, behaviors, and physiological processes. Different treatments work by attacking different facets of the overall picture. However, there are times when one type of therapy may be more suitable depending on the type and severity of depression. Some depression especially bipolar or manic depression involves imbalances between neurotransmitters that trigger consequent imbalances of neurohormones. The TCA's (antidepressants) help balance or stabilize electrolytes such as sodium, calcium, and potassium in the body that are directly involved in neurotransmission. Also certain children and adolescents who may mistakenly be labeled hyperactive or schizophrenics may be suffering from bipolar depression. Drugs such as Ritalin may be covering up the bipolar disorder. Lithium rather than imipramine has been shown to be effective in treating bipolar depression (Prien et al., 1973). Blood levels and side effects must be monitored in drug therapy and concentration levels adjusted accordingly. A medical history and some idea of the teenager's involvement with other drugs and alcohol is necessary. There is always the danger as well as that severely depressed or careless teenagers can overdose on antidepressants particularly if used together with alcohol.

As evidenced by the sample research cited (Murphy et al., 1984; Shaw, 1977; Simmons et al., 1984), Beck's cognitive therapy to decrease depression has been shown to decrease moderate depression.

This writer's position is not definite, however. Simmons et al. (1984) has aid that cognitive distortions that are the focus of CT may behave more as symptoms of depression rather than as causes. Lobel and Hirschfield (1984) have said that antidepressants also act on the symptoms of depression and that they do not change the ability to solve life's problems. Reality therapy on the other hand, says that we do not have to "choose" misery--that we can replace the unsatisfied "pictures in our albums" with other pictures that are attainable in the real world. Glasser (1985) believes that we can choose to act responsibly and can thereby change depressed feelings. Active "doing" behaviors such as jogging can decrease depression. However, with chemical or electrolyte imbalance often found in bipolar or manic depression or with severe cognitive distortions, pharmacology and cognitive therapy may be more effective. An added note is that cognitive therapy may also include religious practices and beliefs. A combination of therapies may be needed--one to treat the condition immediately, especially if the teenager is suicidal and another later on to alter cognitive distortions and to encourage responsible choices in coping with life's problems.

REFERENCES

- American Psychiatric Association. (1987). Diagnostic and statistical manual of mental disorders-DSM-III-R (3rd ed.). Washington, DC: American Psychiatric Association.
- Clarizio, H. (1985). Cognitive-behavior and pharmacotherapy. Psychology in the Schools, 22, 308-322.
- Eli Lilly and Company. (1979). The suicidal patient in medical practice. Indianapolis, IN: Eli Lilly and Company.
- Frommer, E. (1967). Treatment of childhood depression with antidepressant drugs. British Medical Journal, 1, 729-732.
- Gallager, D. (1978). Conceptual and clinical issues in the psychotherapy of elderly depressed persons. Paper presented at the Society for Psychotherapy Research, Toronto, Canada. (ERIC Document Reproduction Service No. EJ 189 492)
- Glasser, W. (1985). Control theory-A new explanation of how we control our lives. New York: Harper & Row Publishers, Inc.
- Heckelman, R. G. (1983). Lithium: A treatment for learning and behavior problems. Academic Therapy, 19, 133-136.
- Ivey, A. E., & Ivey, M. B., & Simek-Downing, L. (1987). Counseling and psychotherapy. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Katona, C., & Barns, J. (1985). Pharmacological strategies in depression. British Journal of Hospital Medicine, 34, 168-171.

- Lobel, B., & Hirschfield, P. (1984). Depression: What we know. Rockville, MD: National Institute of Mental Health. (ERIC Document Reproduction Service No. EJ 258 082)
- Murphy, G., Simmons, A., Wetzel, R., & Lustman, P. (1984). Cognitive therapy and pharmacotherapy. Archives of General Psychiatry, 41, 33-41.
- Prien, R., Klett, C., & Caffey, E. (1973). Lithium carbonate and imipramine in prevention of affective episodes. Archives of General Psychiatry, 29, 420-425.
- Rowe, D. (1983). Depression--The way out of your prison. London: Routledge and Kegan Paul.
- Rueter, M. (1980). The effects of running on individuals who are clinically depressed. Paper presented at the Annual Convention of the American Psychological Association, Montreal, Quebec, Canada (ERIC Document Reproduction Service No. EJ 198 413)
- Shaw, B. (1977). Comparison of cognitive therapy and behavior therapy in the treatment of depression. Journal of Consulting and Clinical Psychology, 45, 543-551.
- Simmons, A., Garfield, S., & Murphy, G. (1984). The process of change in cognitive therapy and pharmacotherapy for depression. Archives of General Psychiatry, 41, 45-51.

A P P E N D I C E S

APPENDIX A

Table
Mean Changes in Depression at the Four Assessment Periods

Variable	Cognitive modification	Behavior modification	Non- directive	Waiting list	F ratio
Preassessment					
BDI	30.1	25.6	26.4	26.6	.40
HRSD	30.1	26.1	30.5	29.8	.42
VAS	100.0	98.8	127.4	120.6	1.20
Midassessment					
BDI	14.2	19.1	21.8	22.7	3.11*
HRSD	12.3	19.6	24.5	22.7	3.17*
VAS	41.4	81.3	90.4	74.4	1.25
Postassessment					
BDI	9.9	18.0	16.3	25.0	6.76***
HRSD	9.5	19.8	26.0	23.8	4.07**
VAS	37.7	77.4	84.9	75.1	1.89
Follow-up assessment					
BDI	11.6	18.0	—	—	1.87
HRSD	13.6	20.4	—	—	1.44
VAS	49.3	80.9	—	—	1.96

Note. The adjusted means are reported only for the midassessment, postassessment, and follow-up assessment periods. BDI = Beck Depression Inventory; HRSD = Hamilton Rating Scale for Depression; VAS = Visual Analogue Scale.

* $p < .05$.
 ** $p < .02$.
 *** $p < .001$.

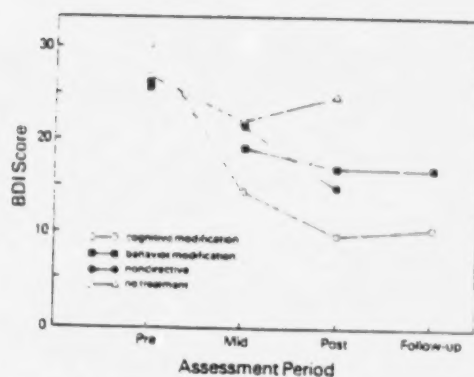


Figure 1. Changes in the Beck Depression Inventory (BDI) over time.

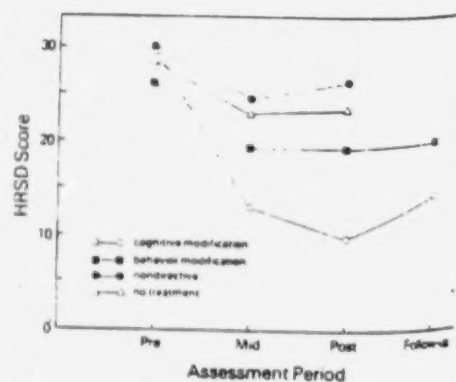
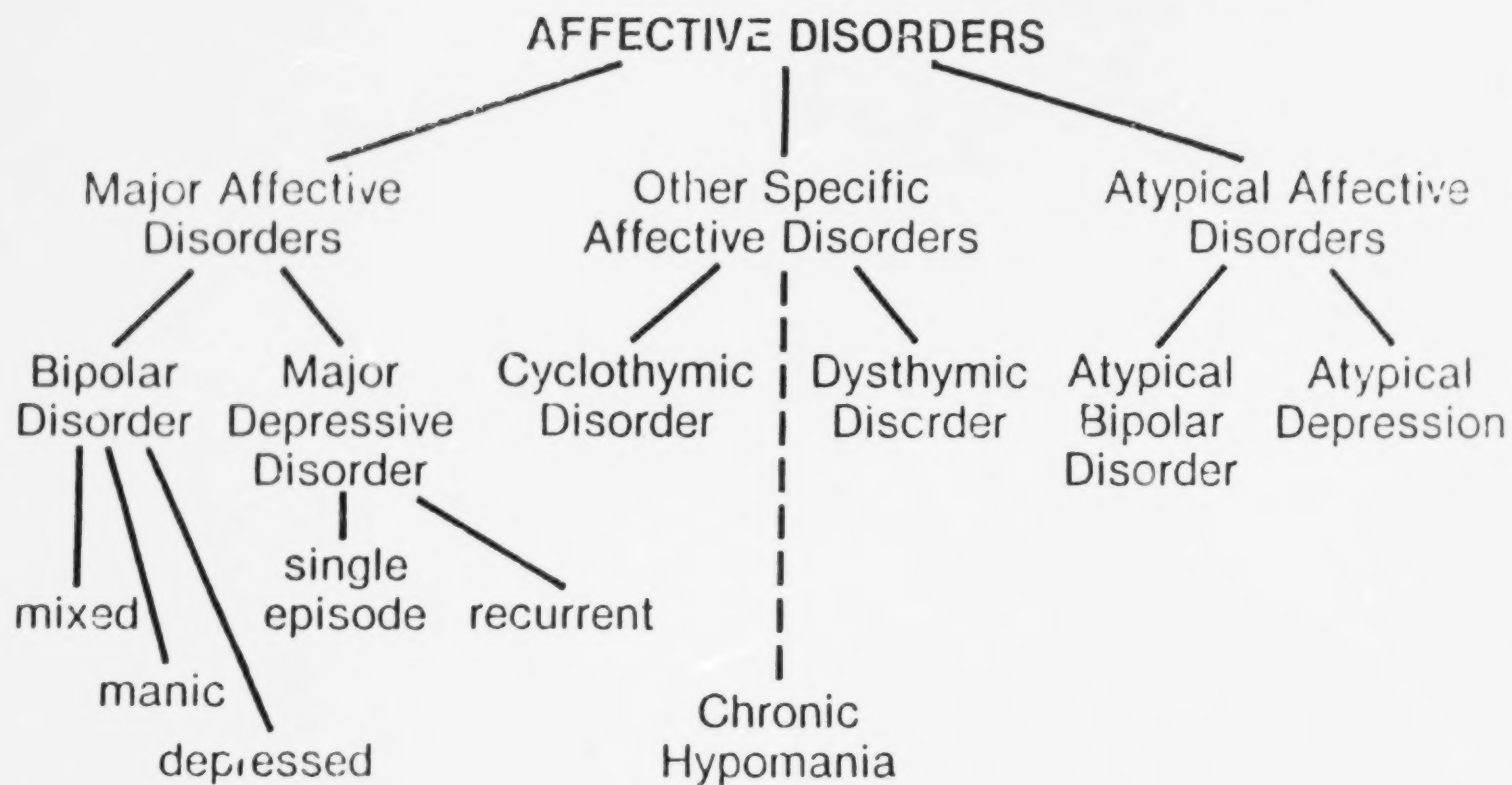


Figure 2. Changes on the revised Hamilton Rating Scale for Depression (HRSD) over time.



APPENDIX C

Table — Mean Depression Scores Before Treatment, at End of Treatment, and One Month After Treatment*

	CT			TCA			CT and Placebo			CT and TCA		
	Pretreatment	End	1-mo FU	Pretreatment	End	1-mo FU	Pretreatment	End	1-mo FU	Pretreatment	End	1-mo FU
Completers (n = 70)												
$\bar{x}$	28.68	9.53	10.53	29.25	8.94	10.69	30.29	8.18	10.35†	29.06	8.78	7.83
SD	4.78	8.21	9.91	7.27	9.12	9.00	6.54	8.43	9.69	5.90	10.69	7.94
n	19	19	19	16	16	16	17	17	16	18	18	18
Dropouts (n = 17)												
$\bar{x}$	29.80	16.00‡	...	30.50	21.25‡	...	...	...	...	30.00	16.00‡	...
SD	4.87	10.65	...	9.84	14.32	...	...	...	...	7.07	9.20	...
n	5	5	...	8	8	...	0	0	...	4	4	...
Completers and dropouts (n = 87)												
$\bar{x}$	28.92	10.88	...	29.67	13.04	...	30.29	8.18	...	29.23	10.09	...
SD	4.72	8.93	...	8.02	12.32	...	6.54	8.43	...	5.95	10.61	...
n	24	24	...	24	24	...	17	17	...	22	22	...
HRSD												
Completers (n = 70)												
$\bar{x}$	18.47	6.42	6.63	19.69	7.00	6.12	21.35	5.76	8.82†	20.06	6.72	6.11
SD	2.84	6.16	7.08	3.16	5.01	5.24	4.74	5.26	7.20	4.56	6.30	6.01
n	19	19	19	16	16	16	17	17	16	18	18	18
Dropouts (n = 7)												
$\bar{x}$	20.20	11.80‡	...	23.38	18.75‡	...	...	...	...	22.75	15.00‡	...
SD	3.56	6.61	...	5.88	7.96	...	...	...	...	7.04	6.48	...
n	5	5	...	8	8	...	0	...	...	4	4	...
Completers and dropouts (n = 87)												
$\bar{x}$	18.83	7.75	...	20.92	10.92	...	21.35	5.76	...	20.55	6.23	...
SD	3.00	6.50	...	4.49	8.22	...	4.74	5.26	...	5.00	7.00	...
n	24	24	...	24	24	...	17	17	...	22	22	...

*CT indicates cognitive therapy; TCA, tricyclic antidepressant; End, end of treatment; FU, follow-up; BDI, Beck Depression Inventory; and HRSD, Hamilton Rating Scale for Depression.

†One missing follow-up score; termination score used.

‡Last recorded score taken as termination score.

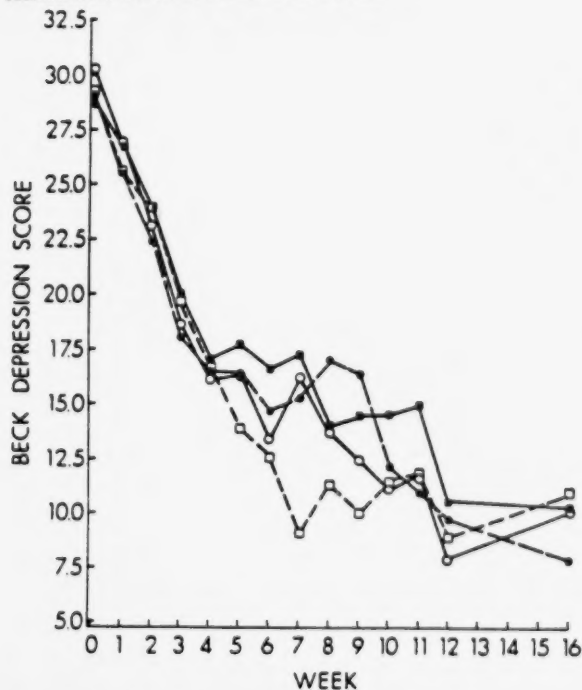


Fig 1.—Beck Depression Inventory scores for four treatment groups by week (means). Closed squares indicate cognitive therapy (CT) group; open squares, tricyclic antidepressant (TCA) group; open circles, CT and placebo group; and closed circles, CT and TCA group.

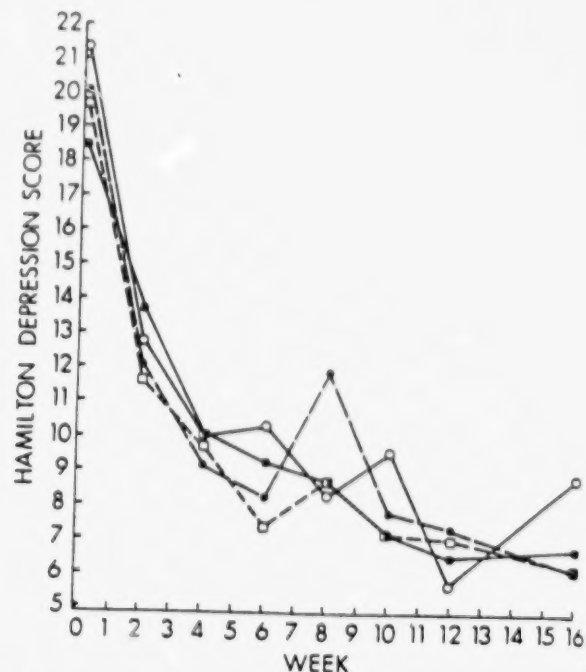


Fig 2.—Hamilton Rating Scale for depression scores for four treatment groups by week (means). Closed squares indicate cognitive therapy (CT) group; open squares, tricyclic antidepressant (TCA) group; open circles, CT and placebo group; and closed circles, CT and TCA group.

APPENDIX D1

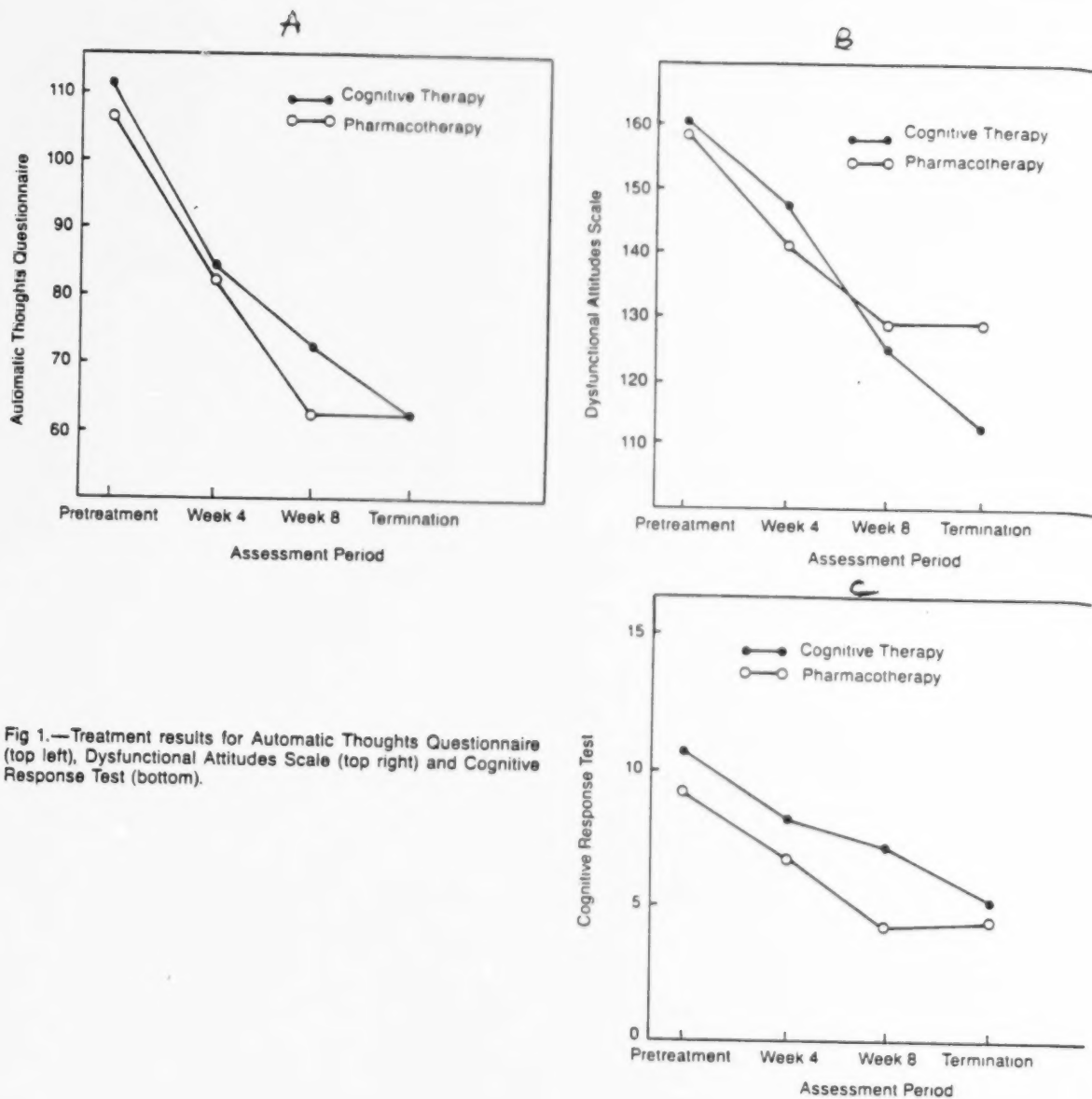


Fig 1.—Treatment results for Automatic Thoughts Questionnaire (top left), Dysfunctional Attitudes Scale (top right) and Cognitive Response Test (bottom).

APPENDIX D 2

Table —Results of Repeated-Measures Analysis of Variance for Cognitive Therapy and Pharmacotherapy Groups

Table —Results of Repeated-Measures Analysis of Variance for Cognitive Therapy and Pharmacotherapy Groups									
Measures*	Evaluation Period								F Ratio for Effects‡
	Pretreatment†		Week 4		Week 8		Termination		
	Cognitive Therapy	Pharmacotherapy	Cognitive Therapy	Pharmacotherapy	Cognitive Therapy	Pharmacotherapy	Cognitive Therapy	Pharmacotherapy	
HRSD									
Mean	18.00	19.00	10.21	9.38	8.43	7.93	8.21	8.43	35.83§
SD	3.44	2.88	5.09	4.89	5.11	4.73	5.69	4.99	
BDI									
Mean	29.79	28.64	17.36	16.71	13.50	10.29	9.29	8.57	84.79§
SD	4.96	7.31	8.35	8.09	8.09	8.70	7.87	9.29	
VAS									
Mean	73.57	63.57	55.36	48.43	40.38	30.38	20.36	36.07	16.98§
SD	11.67	21.16	15.25	27.13	29.32	25.15	19.85	28.23	
ATQ									
Mean	111.50	105.50	84.29	81.38	71.43	61.14	62.00	62.64	24.73§
SD	21.92	21.96	24.72	21.65	35.93	18.02	32.07	30.05	
DAS									
Mean	160.29	157.50	146.43	139.21	124.21	128.79	111.36	128.14	6.39
SD	28.78	29.20	32.36	45.23	46.26	41.50	44.63	51.29	
CRT									
Mean	10.36	8.93	8.28	6.35	7.07	4.21	4.43	5.07	4.43
SD	5.69	5.28	3.73	3.63	5.57	2.86	4.38	5.18	

*HRSD indicates Hamilton Rating Scale for Depression¹²; BDI, Beck Depression Inventory¹¹; VAS, Visual Analogue Scale¹³; ATQ, Automatic Thoughts Questionnaire¹⁴; DAS, Dysfunctional Attitudes Scale¹⁵; and CRT, Cognitive Response Test.¹⁴

† $P > .05$ for all t tests of between-group differences at pretreatment.

‡Univariate F ratio presented only when justified by statistically significant overall multivariate F ratio.

§ $P < .001$.

|| $P < .01$.

APPENDIX E

HOW PHARMACOTHERAPY OR THE USE OF ANTIDEPRESSANTS AFFECT THE NERVOUS SYSTEM

A. GENERAL PHYSIOLOGICAL PROCESSES

Pharmacotherapy is based on the theory of differential imbalance between neurotransmitters. Imbalances between neurotransmitters trigger consequent imbalances of neurohormones. There is a connection between the hypothalamus, the pituitary, and the adrenal glands. Also, electrolytes in the body, e.g. sodium, magnesium, calcium, and potassium are directly involved in transmission. Thus imbalances or problems with electrolytes have been correlated with certain types of clinical depression.

B. THE THREE MAJOR TYPES OF ANTIDEPRESSANTS USED TO TREAT SEVERE DEPRESSION

1. TRICYCLIC ANTIDEPRESSANTS - These are thought to prevent neurotransmitters in the the synaptic cleft from being returned to the sending neuron, thus making more of them available for transmitting electrical impulses.
2. MONOAMINE OXIDASE INHIBITORS (MAOI'S) - These drugs apparently have a similar effect, achieved, it is thought, by inhibiting the action of MAO, a brain enzyme that destroys neurotransmitters.
3. LITHIUM - Lithium's method of action is complex. It seems not only to influence neurotransmitter action but also to affect electrolytes and other substances and functions of the body. It is often used in the manic phase of bipolar disorder. It takes 4-10 days for its therapeutic action to occur so in several cases such as suicide attempts an antipsychotic drug may be used. Lithium can also be used as a maintenance drug to prevent or reduce future episodes of bipolar disorder. It is necessary to have regular blood tests during lithium treatment to check the level of the drug. It can be toxic in excessive doses. It is necessary to get a history of all other drugs and alcohol consumption when prescribing these types of drugs. Side effects can include nausea, stomach cramps, thirstiness, muscle weakness, hand tremors, weight gain, and feelings of tiredness and lethargy. The side effects are usually transient but some may persist. If so the concentration level of the drug will need to be altered.

APPENDIX F

Table (1).—Treatment Outcome				
Patient Group	N	Months 1 to 4	Months 5 to 24	
		Patients With Affective Episodes	N*	Patients With Affective Episodes
Unipolar				
Lithium	27	8 (30%)	22	9 (41%)
Imipramine	25	8 (32%)	21	6 (29%)
Placebo	26	19 (73%)	13	11 (85%)
Bipolar				
Lithium	18	4 (22%)	17	3 (18%)
Imipramine	13	6 (46%)	9	6 (67%)
Placebo	13	7 (54%)	9	6 (67%)

* Does not include patients dropped during first four months.

Table(ii)—Completers With No Affective Episodes		
Patient Group	Total Sample No.	Episode-Free Completers
Unipolar		
Lithium	27	10 (37%)
Imipramine	25	11 (44%)
Placebo	26	2 (8%)
Bipolar		
Lithium	18	9 (50%)
Imipramine	13	2 (15%)
Placebo	13	1 (8%)

Table(iii)—Global Evaluations by Social Worker			
Patient Group	Episodes, %		
	None	Mild Only	Moderate or Severe
Unipolar			
Lithium	36	12	52
Imipramine	53	11	37
Placebo	12	0	88
Bipolar			
Lithium	50	17	33
Imipramine	10	10	80
Placebo	19	27	55